

REMARKS

Applicant thanks the Examiner for the very thorough consideration given the present application. Claims 6, 7, 9-12, 15-20, 22, 23, and 40-42 are pending in the present application. The Examiner is respectfully requested to reconsider and withdraw his/her rejections in view of the amendments and remarks as set forth below.

I. Claim Rejections Under 35 U.S.C. § 112

Claims 6, 7, 9-12, 15-20, 22, and 23 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant(s) regard as the invention. This rejection is respectfully traversed.

With regard to claim 6, line 7, the Examiner indicates that the meaning of "disposed in said case to have a lower space in said case under a bottom surface of said cooling heat exchanger to be slightly inclined" is not clear. Accordingly, Applicants have amended claim 6 to indicate that the bottom surface of the cooling heat exchanger is "slightly inclined." Applicants note that this amendment has been made for clarification purposes only and is not intended to further limit the scope of the claims. Applicants respectfully request reconsideration and withdrawal of this rejection.

II. Claim Rejections Under 35 U.S.C. § 103

Claims 6, 7, 9-12, 15-20, 22, 23, and 40-42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of JA 5-3365 (Fig. 5), JA 6-156049, and any one of Stech, JP '388 or Newton '206. This rejection is respectfully traversed.

Initially, Applicants note that the Examiner has requested a translation regarding element 13 in JA '365. Accordingly, Applicants submit that the translation at col. 4, lines 9-12 of JP 5-3365 is as follows: "The upper blower port (13) is provided in a tilt surface (9), and is constructed such that its direction can be suitably changed."

At the outset, Applicants note that claim 6 includes the following four structures.

1. The cooling heat exchanger is a corrugated fin type;
2. The cooling heat exchanger is disposed approximately horizontally in said case to have a lower space in said case under a bottom surface of said cooling heat exchanger, the bottom surface being slightly inclined relative to a horizontal surface by an inclination angle, and the heating heat exchanger disposed approximately horizontally at an upper side of the cooling heat exchanger;
3. The blower is offset from said cooling heat exchanger to a side of the cooling heat exchanger; and
4. The top end of the air introduction port is positioned above the tilted lower end portion of the cooling heat exchanger, and the bottom end of the air introduction port is positioned under the tilted upper end portion of the cooling heat exchanger in a vertical direction.

In the present invention, the above features cause the condensed water to readily flow to the tilted lower end of the cooling heat exchanger along the bottom surface of the cooling heat exchanger while air blown from the blower is effectively introduced into the cooling heat exchanger. The present advantage for effectively discharging the condensed water along the bottom surface is remarkably improved

when the cooling heat exchanger is of the corrugated fin type. When the cooling heat exchanger without the corrugated fins is used, the present effect is greatly decreased. Because of these features, air can be effectively collected to the lower space under the cooling heat exchanger while the condensed water can be effectively discharged to the lower side along the bottom surface of the cooling heat exchanger. In addition, because of the corrugated fin, the advantage is further accentuated.

Applicants submit that JA '365 (Fig. 5) discloses an air conditioner in which the cooling heat exchanger is disposed approximately horizontal so that the bottom surface of the cooling heat exchanger is slightly inclined relative to the horizontal surface, and the heating heat exchanger is disposed approximately horizontally at an upper side of the cooling heat exchanger. In addition, the blower 20 is offset from the cooling heat exchanger 6 to a side of the cooling heat exchanger. However, JP 5-3365 fails to disclose the cooling heat exchanger being a corrugated fin type and does not disclose the top end of the air introduction port being positioned above the tilted lower end portion of the cooling heat exchanger and the bottom end of the air introduction port being positioned under the tilted upper end portion of the cooling heat exchanger in a vertical direction.

Of the cited references, Stech '046 and JA '388 disclose the top end of the air introduction port being positioned above the tilted lower end portion of the cooling heat exchanger and the bottom end of the air introduction port positioned under the tilted upper end portion of the cooling heat exchanger in the vertical direction, as claimed. However, each of these documents do not have a cooling heat exchanger disposed approximately horizontally so that the bottom surface of the cooling heat exchanger is

slightly inclined relative to the horizontal surface, and the heating heat exchanger being disposed approximately horizontally at an upper side of the cooling heat exchanger. Specifically, in Stech '046, the heat exchanger unit 24 is disposed approximately vertically, as illustrated in Figure 2. Similarly, in Figure 4 of JA '388, the evaporator 100 is disposed approximately vertically and a heating heat exchanger is not provided directly above the cooling heat exchanger. Therefore, the JA '388 document is not for blowing air upwardly directly above the evaporator 100, but for blowing in a lateral or horizontal direction.

Accordingly, even when Stech '046 or JA '388 are incorporated into the invention of JA '365, the combination is improper because Stech '046 and JA '388 have approximately vertically arranged cooling heat exchangers, and there is a contradiction for combining these structures with the structure of JA '365. This contradiction is significant in view of the fact that when the cooling heat exchanger is approximately vertically arranged, the movement of the condensed water is completely different from the present invention, and there is no motivation or suggestion from either of the references for making the proposed combination with JA '365.

Applicants further submit that Newton '206 merely discloses a cooling evaporator coil 20 that is tilted for draining water from the coil. However, Newton '206 fails to describe that the cooling heat exchanger is a cooling fin type or that the blower is offset to a side of the cooling heat exchanger. Furthermore, there is no suggestion or motivation for combining the teachings of Newton '206 with the system of JA '365.

Applicants submit that although several features of Applicants' claim may be separately taught among several references, none of the references properly teach or

suggest the Examiner's proposed modifications in order to arrive at the claimed invention as a whole. Therefore, Applicants respectfully request reconsideration and withdrawal of this rejection in view of the fact that the combination of references is improper.

Claims 6, 7, 9-12, 15-20, 22, 23, and 40-42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art as applied to claim 6 above, and further in view of Negao et al '340 or JA 63-38016. This rejection is respectfully traversed.

Applicants submit that this rejection should be withdrawn for the same reasons as stated above in view of the fact that the combination of references as applied to claim 6, above, are improper. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

Claims 6, 7, 9-12, 15-20, 22, 23, and 40-42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art as applied to claim 6 above, and further in view of Gebhardt, Marsteller, Brandecker, Bates, or Mullin et al. This rejection is respectfully traversed.

Applicants submit that this rejection should be withdrawn for the same reasons as stated above in view of the fact that the combination of references is improper. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

Claims 6, 7, 9-12, 15-20, 22, 23, and 40-42 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 5,755,107 in view of the prior art applied to claims 6, 7, 9-12, 15-20, 22, 23, and 40-42. A terminal disclaimer is submitted herewith in order to

overcome the obviousness type double patenting rejection. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

Claims 6, 7, 9-12, 15-20, 22, 23, and 40-42 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,044,656 in view of the prior art applied to claims 6, 7, 9-12, 15-20, 22, 23, and 40-42. A terminal disclaimer is submitted herewith in order to overcome the obviousness-type double patenting rejection. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

III. **Conclusion**

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant(s) therefore respectfully request(s) that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding office action, and as such, the present application is in condition for allowance. If the Examiner believes that personal communication will expedite prosecution of this application, he/she is invited to telephone the undersigned at (248) 641-1600.

Prompt and favorable consideration of this amendment is respectfully requested.

Respectfully submitted,

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ATTACHMENT FOR CLAIM AMENDMENTS

Serial No. 09/531,531

The following is a marked up version of each amended claim in which underlines indicate insertions and brackets indicate deletions.

6. (FOUR TIMES AMENDED) An air conditioner for a vehicle having a passenger compartment, said air conditioner comprising:

 a case forming an air passage through which air is blown into the passenger compartment;

 a blower for blowing air in said case into the passenger compartment;

 a cooling heat exchanger for cooling air blown from said blower, said cooling heat exchanger being disposed approximately horizontally in said case to have a lower space in said case under a bottom surface of said cooling heat exchanger [to be], the bottom surface being slightly inclined relative to a horizontal surface by an inclination angle;

 a heating heat exchanger for heating air from said cooling heat exchanger so that the temperature of air to be [blow] blown into the passenger compartment is conditioned, said heating heat exchanger being disposed approximately horizontally at an upper side of said cooling heat exchanger; and

 a mode switching member for selectively switching flow direction of the conditioned air blown into the passenger compartment, wherein

said cooling heat exchanger includes a plurality of tubes through which refrigerant flows, and a plurality of corrugated fins disposed between adjacent said tubes;

 said blower is offset from said cooling heat exchanger to a side of said cooling heat exchanger;

 said bottom surface of said cooling heat exchanger has a tilted upper end portion and a tilted lower end portion;

 said case has a case portion defining an air introduction port from which air [blow] blown by said blower is introduced into said lower space, said air introduction port having a top end and a bottom end in a vertical direction; and

 said top end of said air introduction port is positioned above said tilted lower end portion of said cooling heat exchanger, and said bottom end of said air introduction port is positioned under said tilted upper end portion of said cooling heat exchanger, in the vertical direction.